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Plates:

Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This multigraphed circular is largely made up from notes received from agricultural explorers, foreign correspondents, cooperators, and others, relative to the more important plants which have recently been received by the Office of Foreign Seed and Plant Introduction of the Department of Agriculture; in it are also contained accounts of the behavior in America of plants previously introduced. Descriptions appearing here are revised and published later in the Inventory of Seeds and Plants Imported.

Applications from experimenters for plants or seeds described in these pages may be made to this Office at any time. As they are received the requests are placed on file and when the material is ready for the use of experimenters it is sent to those who seem best situated and best prepared to care for it. The plants or seeds here described (except such as are distributed direct or are turned over to specialists in the Department who are working on investigational problems) are propagated at our Plant Introduction Field Stations; and when ready to be distributed are listed in our annual check lists, copies of which are sent to experimenters in the late fall. It is not necessary, however, to await the receipt of these lists should one desire to apply for plants which are described herein.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant breeders and experimenters. Every effort will be made to fill specific requests for experimental quantities of new or rare foreign seeds or plants.

David Fairchild,
Agricultural Explorer in Charge

Office of Foreign Seed and Plant Introduction,
Bureau of Plant Industry,
U. S. Department of Agriculture.

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Asparagus lucidus (Convallariaceae), 48697. Asparagus. From Kuliang Hills, near Foochow, Fukien, China Seeds collected by Mr. J. B. Norton, agricultural explorer. "A climbing vine of great beauty, growing commonly on the moist wooded slopes of ravines. Its graceful foliage and habit make it very attractive. The fleshy roots are said to be used by the Chinese for conserves." (Norton.)

Chamaedorea sp. (Phoenicaceae), 49325. **Pacaya.** From Coban, Guatemala. Plants collected by Mr. Wilson Popenoe, agricultural explorer. "No. 236. The **pacaya** or Guatemalan salad palm, a species which was introduced into the United States in 1917 (see S. P. I. No. 44059), but which is worthy of a wider trial than has yet been given it. It is a tender plant, probably suitable for cultivation in the United States only in southern Florida. It likes half-shade, plenty of moisture, and a soil rich in humus. It is a handsome small palm reaching about 20 feet in height, with a straight trunk about 2 inches in diameter, and a crown of graceful pinnate leaves about 6 feet long. In Guatemala the leaves are often cut and used for house decoration. The young inflorescences, which are taken before the spathes are open, furnish the popular dish, pacaya salad. They can also be fried in batter or boiled with other vegetables. They have a slightly bitter taste. If these inflorescences could be produced commercially in southern Florida, pacaya salad would undoubtedly find a place upon the menus of large hotels and restaurants in northern cities." (Popenoe.)

Colocasia esculenta (Araceae), 49020. Taro. From Kaying, Kwangtung, China. Tubers presented by Rev. J. H. Giffin, American Baptist Academy. "Here in Kaying the Penang taro is considered delicious, but it does not grow large. The corm of the Penang taro is usually larger than that of the other kinds, but the small tubers are smaller than those of other kinds. There are also fewer tubers; that is, a Penang corm has usually not more than four small tubers, while other varieties have many." (Giffin.)

"The Penang taro is considered to be the finest flavored of all the known varieties of this important food crop. It is distinguished from other taros by the purple fibers which traverse the white flesh and by a characteristic delicious fragrance which develops during cooking. The Penang differs also from the Trin-

idad dasheen and many other varieties of taro in that the corm, when grown under favorable conditions, is distinctly elongated instead of being roundish or oval. Unlike the Trinidad dasheen and similar varieties, the Penang taro usually produces not more than two or three cormels, or lateral 'tubers,' of marketable size; the crop, therefore, consists mainly of corms which range from one to eight or more pounds each in weight. Unfortunately, this delicious taro is a rather poor keeper as compared with varieties of the dasheen type. Corms and cormels are acrid in the raw state.

"The meaning of the name Penang as applied to this taro is uncertain, but the Chinese character from which it is derived is said to be to be the same as that for 'betel nut.' Other renderings of the name are Pat-long, Paan-long, and Banlung." (R. A. Young.)

Dahlia maxonii (Asteraceae), 49326. **Dahlia.** From Coban, Guatemala. Cuttings collected by Mr. Wilson Popenoe, agricultural explorer. "(No. 237. 'Single white variety.' A rare form of the common tree dahlia of Guatemala, producing single white, starlike flowers up to 5 inches in diameter. It appears to occur only as a cultivated or semicultivated form; I have never seen it among the wild plants on the mountainsides. In habit of growth and other characteristics except the color of the flowers it is identical with the typical *D. maxonii*." (Popenoe.)

Eucryphia pinnatifolia (Eucryphiaceae), 49271. **Quinto Santo.** From Valparaiso, Chile. Seeds presented by Mr. C. F. Deishman, American consul in charge. An evergreen shrub or bush, from 3 to 10 feet high, which is particularly attractive because of its large white flowers, 2 to 3 inches across, not unlike a large single rose with a tuft of stamens in the center. It does best in a rather moist situation protected from the strongest rays of the sun. (Adapted from The Garden, vol. 77, p. 421.)

Evodia daniellii (Rutaceae), 49131. From Rochester, N. Y. Cuttings presented by Mr. John Dunbar, assistant superintendent of parks. A moderate-sized bushy tree, 10 to 20 feet high, with unequally pinnate leaves up to 3 inches in length. The flowers appear in June and July in numerous corymbose panicles. The fruit consists of a number of oblong or elongated capsules which have a peculiar aromatic odor and a pungent bitter flavor.

The natives are said to use parts of this fruit as a condiment. (Adapted from Annals and Magazine of Natural History, vol. 10, 3d ser., p. 198.)

Lilium brownii (Liliaceae), 48716. **Lily.** From Kuliang Hills, near Foochow, Fukien, China. Seeds collected by Mr. J. B. Norton, agricultural explorer. "The lily that makes Kuliang beautiful in June and July. The solitary trumpets of this large lily stand out in bold relief against the barren hillsides. The buds and young flowers are light yellow, but the full open flower gradually turns to a clear white with purple or brownish stripes on the outer petals. The bulbs are said to be eaten by the Chinese." (Norton.)

Nomocharis pardanthina (Liliaceae), 49281. From Elstree, Hertford, England. Seeds presented by Mr. Vicary Gibbs, Aldenham House Gardens. A rare liliaceous plant from western China, concerning which Mr. Reginald Farrar writes as follows:

"It is most like some hybrid of a minor lily with *Odontoglossum rossii*, combining the perverse and sinister spottings of the one with the frank and graceful loveliness of the other, with a delicacy of shell-pink coloring. You see it on the high alpine grassy slopes of Hpimaw Pass, nodding down at you with myriads of wide-open dark-eyed faces, in every shade of pale rose. For four thousand years the Chinese have devoured its bulbs like onions." (Gardners' Chronicle, 3d ser., vol. 66, p. 221.)

Persea schiedeana (Lauraceae), 49329. **Verapaz Coyo.** From Coban, Alta Verapaz, Guatemala. Cuttings collected by Mr. Wilson Popenoe, agricultural explorer. "No. 240. This is a superior variety of the coyo from the property of Padre Rivera in Tactic. An illustration of the fruit can be seen in Plant Industry Bulletin No. 743, The Avocado in Guatemala, pl. 13; in this plate an ordinary coyo is shown on the right, and the Verapaz variety (as I suggest it be called) appears on the left. It is the finest coyo I have seen, and I strongly recommend it for trial in southern Florida and Southern California, since I have come more and more to feel that the coyo, in its finer varieties, is a fruit of even better flavor than the avocado. Unfortunately, this species has never been given horticultural attention, and doubtless much remains to be done before it can take a place in our orchards

with the avocado. The first step, certainly, is to secure the best available varieties and I feel sure that the Verapaz is one of them, for a thorough search through the territory in which the coyo is abundant, has disclosed none better. Its pear-shaped fruits weigh about a pound, and have a thick, leathery skin, and ivory-white flesh which contains much oil and has a rich, cocoanutlike flavor; the seed is about the same size as that of our best avocados.

"The coyo probably does not come into bearing as young as the avocado, and as a rule it is not so productive in old age; but varieties which will be satisfactory in this latter respect can probably be obtained. I am inclined to believe also that the fruit from young trees may be much inferior in quality to that from old ones. These points and several others must be determined by a trial in the United States and elsewhere. Since the tree occurs in Guatemala at altitudes ranging from 300 to 6,000 feet, it seems probable that the species will succeed in cool regions like Southern California and South Florida as well as in warm ones like Cuba and Porto Rico." (Popenoe.)

Persea schiedeana (Lauraceae), 49330. **Hempstead Coyo.** From Coban, Alta Verapaz, Guatemala. Cuttings collected by Mr. Wilson Popenoe, agricultural explorer. "No. 241. This variety has been called to my attention by Robert W. Hempstead, after whom I suggest it be named; the parent tree is growing in a small finca along the road from Coban to San Cristobal Verapaz, and the fruit, which I have not seen, is described as large and of excellent quality. It is said to be pear shaped, somewhat slender, up to two pounds in weight, with ivory-white flesh free from fiber and of excellent quality in every way. The parent tree is probably 50 years old, if not more; it is about 50 feet high, and is said to be productive; at the time this budwood was cut (Dec. 26) it was in flower. The season of ripening is August and September.

"In this variety and the previus one (Verapaz) we probably have two coyos of as good quality as can now be obtained, and with them as a beginning I believe it will readily be possible to develop from this species a fruit new to horticulture and of great value for tropical and subtropical regions." (Popenoe.)

Phyllostachys puberula nigra (Poaceae), 49222. **Bamboo.** From Niles, Calif. Plants purchased from the California

SIX-YEAR-OLD CLUMP OF EDIBLE BAMBOO IN SOUTH CAROLINA.

(*Phyllostachys pubescens* Houzeau. See S. P. I. No. 47370.)

A clump of edible bamboo, called "Moso" by the Japanese, planted in 1912 by Mr. Rufus Fant. The bamboos are growing along a little stream which runs through Silver Brook Cemetery, not far from Mr. Fant's house. He took a single plant, from the little grove at the side of his house, in February, 1912, and started this clump along the stream. We counted, together, 266 good-sized canes about 30 feet tall, one of which is 12½ inches in circumference 1 inch above the ground. The canes range in circumference from 5 to 12½ inches. This grove is strikingly similar to the clumps of bamboo seen everywhere in China and Japan. (Photographed by David Fairchild, Anderson, S. C., November 15, 1918; P24590FS. For near view, see the next plate.)

NEAR VIEW OF 6-YEAR-OLD CLUMP OF EDIBLE BAMBOO IN SOUTH CAROLINA.

(*Phyllostachys pubescens* Houzeau. See S. P. I. No. 47370.)

This grove has withstood a temperature of 2° F. and is apparently as vigorous as any groves of equal age in Japan. Its young shoots, produced in March or April, are a delicious vegetable, much prized by foreigners in the Orient. They remind one of sweet corn in flavor and are in great demand by the Chinese restaurants of this country. (Photographed by David Fairchild, Anderson, S. C., November 14, 1918; P24592FS. Near view of the grove shown in the preceding plate, which see.)

Nursery Co. One of the most elegant of bamboos, with characteristic black stems 10 to 20 feet in height and plumelike masses of dark green leaves. It is a native of China and Japan, and is quite hardy in regions of mild winters. (Adapted from Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 152.)

Rubus swinhoii (Rosaceae), 48740. From Kuliang Hills, near Foochow, Fukien, China. Seeds collected by Mr. J. B. Norton, agricultural explorer. "The berries when ripe come off like thimbleberries; they are of good quality, rich dark red in color, and with a distinct, pleasantly bitter flavor which makes them of value in hybridization work. The juice of this berry would add flavor to some of our more tasteless Rubus fruits." (Norton.)

Rubus sp. (Rosaceae), 49332. From Coban, Alta Verapaz, Guatemala. Seeds collected by Mr. Wilson Popenoe, agricultural explorer. "No. 244a. 'Tokan uuk' (Ketchi), 'mora' (Spanish). The most remarkable Rubus of the Verapaz, and one which seems to possess unusual promise. It can best be likened to the loganberry in character, yet its flavor is more nearly that of the red raspberry. For the large size of the fruits and their excellent quality it merits a careful trial in the United States.

"In habit the plant is suberect or even trailing, and it makes little wood. The canes sometimes reach 15 feet in length. The stems and lower surfaces of the leaves are silvery white, by which means it is easy to distinguish this species from the others which occur in the Alta Verapaz. Compared to most of them, it is rare. The leaves are trifoliolate, with lanceolate to elliptic leaflets, long-acuminate and sharply serrate. The flowers are white, in panicles up to 6 inches long. The fruits vary from round to oblong in form, and are often an inch in length; in cultivation they would quite likely be even larger.

"The wild plants are not very productive, but their productiveness could be greatly increased by proper pruning. The fruit is not borne at the ends of the canes, but upon short, fruiting laterals, and pruning would increase the number of these. By the Indians of the Verapaz this is esteemed as the finest of the wild species of Rubus, an esteem to which it seems fully entitled. The plant is found occasionally along roadsides and in the edge of scrub. It likes a heavy

soil and plenty of moisture." (Popenoe.)

Sambucus nigra (Caprifoliaceae), 48839. **Elderberry.** From Wiesbaden, Germany. Seeds presented by Mr. Hugo Mulertt. "Last year I found growing in an abandoned quarry in the Taunus Mountains, here near the Rhine, a young elderbush (Sambucus), apparently bearing for the first time. The fruits instead of being black were greenish golden in color and semitransparent when ripe; the individual berries were about three or four times as large as those of common *Sambucus nigra* and very sweet and spicy. It was used in cooking and found excellent and quite distinct in taste. The fact, too, that its juice does not stain or discolor table linen is of no little importance. I have propagated it from seeds and cuttings successfully. The bush bore 2½ pounds of fruit last year; this year I gathered 21 pounds from it." (Mulertt.)

Notes on Behavior of Previous Introductions.

The following letter from Mr. Charles T. Simpson, Littleriver, Fla., was received July 19, 1919.

"While at Mr. Deering's place at Buena Vista, I saw the 'governor plum,' *Flacourtia ramontchi* (S. P. I. No. 27929), a member of the Bixaceae. It is a strong-growing plant with attractive appearance, and several specimens were loaded with globular berries which are dark red (when fully ripe almost black). These vary from three-fourths of an inch to an inch in diameter and contain a half dozen moderate-sized seeds in a firm pulp which is very good. For eating out of hand they are fine, and probably could be made into jelly or sauce, for they have a pleasantly subacid flavor peculiarly their own. The only drawback is that the plant is dioecious. I have one fine plant that is about 15 feet high and, although it never had any fertilizer, it is growing at an astonishing rate."

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